

BIOLOGICAL ASSESSMENT FOR IMPACTS TO
RARE, THREATENED AND ENDANGERED SPECIES

SMITH CREEK IRRIGATION PROJECT
COUGAR LAKE

I. INTRODUCTION

Water levels in Cougar Lake will be lowered and held at or near stream bed elevation (1400 ngvd) until the spring of 2005, to allow construction of temperature control facilities at the dam. Normal operation of the dam since construction in 1963 includes refilling of the lake by May 15th with subsequent lowering to provide flood control storage commencing in September. This water level regime creates harsh conditions for survival of wetland plants in the lakebed; plants are inundated during their growing season and then exposed to drought conditions during the end of the summer. In general, few native plants survive the unnatural hydrology imposed by flood control operations, although several large *Carex* stands occur in the Cougar lakebed (see below). During the two growing seasons between 2003 and 2005 it is expected that a significant amount of upland vegetation will become established within the exposed draw down zone of the reservoir, yet the majority of it will not survive refilling the pool in 2005. Willamette Valley Projects and McKenzie River Ranger District Biologists reviewed a number of sites within the Cougar lakebed during March 2002 for the purpose of identifying wetland and riparian habitat development opportunities that could be initiated during the extended draw-down. It's hoped that given an opportunity to grow without inundation for 2 years, riparian vegetation will establish to the point where it will survive subsequent flooding. There is a general consensus that the establishment and maintenance of lakebed vegetation where practical will result in significant fish, wildlife and water quality benefits.

The proposed wetland/riparian enhancement project will also attempt to insure the continued health and vigor of an existing *Carex* plant community, which may be affected by the three successive dry growing seasons anticipated due to reservoir draw down. Additionally, the proposal includes measures to manage invasive exotic species such as reed canary grass and to further diversify the vegetated zone by establishing a flood tolerant woody vegetation component of native willows which may be expected to survive and continue to grow following resumption of normal water level management in the reservoir.

McKenzie Ranger District is working with the Corps to implement this project.

II. SITE DESCRIPTION

Cougar Lake is formed by a dam on the South Fork of the McKenzie River in the upper McKenzie watershed (Figure 1). The proposed lakebed work site is a shallow, 20 acre basin just north of where Smith Creek enters the lake near the upper end of the reservoir (Figure 2). The basin supports a significant established population of *Carex aperta* on a gentle slope that starts at full pool elevation and drops to approximately – 50 ft near the riverbed. This plant community has been established and maintained under years of seasonal inundation by the lake. An old highway runs along the river in this section making the area easy to access with equipment. The entire reservoir lies within the Willamette National Forest, and is managed by the McKenzie Ranger District. Forest lands to the east of the work-site lie within the Three Sisters Wilderness Area; to the west are lands included in the Central Cascades Adaptive Management Area. This has a very specific purpose as stated in the Northwest Forest Plan (1994) p. D-12 "Intensive research on ecosystem and landscape processes and its application to forest management in experiments and demonstrations at the stand and watershed level; approaches for integrating forest and stream management objectives and on implications of

natural disturbance regimes; and management of young and mature stands to accelerate development of late-successional conditions.....". Several small recreation areas in the vicinity provide access to the lake and day-use facilities (Figure 3).

III. PROJECT DESCRIPTION

The proposed action is to install an irrigation system capable of irrigating the approximately 15 acre vegetation zone at the Smith Creek site, using water drawn from the adjacent South Fork of the McKenzie River. The irrigation system will be operated at 7 to 10 day intervals through the dry part of the growing season, ie., June through September. The vegetation within the existing *Carex* zone will be augmented during the winter of 2002-2003 by the planting of several hundred ball and bare root willows within the upper reaches of the site, between the full pool level and approx. -20 feet where survival of the established plantings is expected to be greatest. The availability of nursery stock ranging in size from 1 to 3 gallons appears to be good for species including *Salix sitchensis*, *Salix scouleriana* and *Salix lasiandra*. There is also opportunity for growing rooted stock of other native species exhibiting flood tolerance.

Exotic species such as reed canary grass will be controlled by grubbing. Labor for planting and maintenance of vegetation within the irrigation plot will be provided with the assistance of the McKenzie Ranger District through their agreement with the Lane County Forest Work Camp.

The irrigation system will be portable with the exception of approximately 1850 feet of 6 inch PVC pipe with risers buried in a trench along an approximate - 30 foot contour line through the site. A trailer mounted 8" diesel pump with revolving screen draft tube assembly and six aluminum tripod mounted Nelson gun sprinklers served by 3" aluminum surface laterals will comprise the portable components that can be mobilized on site as needed. Set up, operation and take down of the portable system components should be accomplished in one day by two laborers. Installation of the 6" PVC main line will require the excavation and back filling a 12" wide trench approximately 18" deep. Concrete thrust blocks will be necessary at several locations. Additionally, a draft screen sump and/or graded coarse rock filter will need to be excavated and maintained in the bed of the river adjacent the pump location to facilitate submersion of the draft tube screen. It is anticipated that the pump will run not more than 8 hours at a time, one day a week, at the height of the summer drought period (July - September). Irrigation will commence early enough to prevent water stress - probably sometime between late May and late June, depending on the weather, and end when the rains come in October. Early and late season watering may occur less than once a week. The pump will have a special muffler installed to reduce noise during operation, and a baffle will be constructed to direct sound towards the south away from the hillsides.

Permission to install the draft tube outside the in-water work period will be sought from the Oregon Department of Fish and Wildlife. A water withdrawal permit for the irrigation water was applied for in September 2002 and is being processed by the Oregon Department of Water Resources.

III. AFFECTED ENVIRONMENT

This biological evaluation covers a 6-step process to identify threatened, endangered, and sensitive wildlife species that may be associated with the project area, and to evaluate any impacts the project may have to those species. Because this action occurs within the National Forest, the evaluation addresses listed T&E species, as well as additional species indicated as rare included in the Regional Forester's Sensitive Species List. The six steps are as follows:

1. Review of existing documented information (Table 2).
2. Field reconnaissance of the project area for evidence of species or habitat (Table 2).
3. Evaluation of the impacts of the project to suspected or known local populations of TES species (Table 1).
4. Analysis of the significance of the project's effects on local and entire populations of TES species (Table 1).
5. If step 4 cannot be completed due to lack of information, a biological investigation is initiated.

Conferencing or informal/formal consultation with FWS is initiated at the appropriate stage.

Step #5 (BIOLOGICAL INVESTIGATION) was not required for any species, and it is not displayed. Blanks indicate steps not needed to complete the analysis. (Under "Survey Completed," a No* indicates standardized surveys were not required because the proposed alternatives would avoid impacts to potential habitat. Wildlife surveys are not required if potential habitat is not present.

Table 1: Summary of Impact Determinations for Animal Species on the Regional Forester's Sensitive Species List, Willamette National Forest. The Regional Forester's Sensitive Species List for Animals was last revised on November 28, 2000 (Forest Service Manual 2670 Interim Directive 90-1). (Note: adjacent forest lands are managed by the USFS. Forest Service Manual 2670 directs consideration of impacts to these species within the National Forest.)

TES Species	Habitat Present?	Survey Complete?	Species Present?	Conflict?	Mitigation	USFWS Consultation
Least Bittern <i>Ixobrychus exilis</i>	No	Not needed	No	NI	None Needed	Not Needed
Bufflehead <i>Bucephala albeola</i>	Migration and wintering only	Not needed	Yes – migration & wintering only	NI	None Needed	Not Needed
Harlequin Duck <i>Histrionicus histrionicus</i>	No	Not needed	No	NI	None Needed	Not Needed
Yellow Rail <i>Coturnicops noveboracensis</i>	No	Not needed	No	NI	None Needed	Not Needed
Black Swift <i>Cypseloides niger</i>	No	Not needed	No	NI	None Needed	Not Needed
Tricolored Blackbird <i>Agelaius tricolor</i>	No	Not needed	No	NI	None Needed	Not Needed
Baird's Shrew <i>Sorex bairdii permiliensis</i>	No	Not needed	No	NI	None Needed	Not Needed
Pacific Shrew <i>Sorex pacificus cascadiensis</i>	No	Not needed	No	NI	None Needed	Not Needed
California Wolverine <i>Gulo gulo</i>	No	Not needed	No	NI	None Needed	Not Needed
Pacific Fisher <i>Martes pennanti</i>	No	Not needed	No	NI	None Needed	Not Needed
Pacific Fringe-tailed Bat <i>Myotis thysanodes vespertinu</i>	No	Not needed	No	NI	None Needed	Not Needed
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	No	Not needed	No	NI	None Needed	Not Needed

TES Species	Habitat Present?	Survey Complete?	Species Present?	Conflict?	Mitigation	USFWS Consultation
Oregon Slender Salamander <i>Batrachoseps wrighti</i>	No	Not needed	No	NI	None Needed	Not Needed
Cascade Torrent Salamander <i>Rhyacotriton cascadae</i>	No	Not needed	No	NI	None Needed	Not Needed
Foothill Yellow-legged Frog <i>Rana boylei</i>	No	Not needed	No	NI	None Needed	Not Needed
Oregon Spotted Frog <i>Rana pretiosa</i>	No	Not needed	No	NI	None Needed	Not Needed
Northwestern Pond Turtle <i>Clemmys marmorata</i>	No	Not needed	No	NI	None Needed	Not Needed
Peregrine Falcon <i>Falco peregrinus anatum</i>	Yes w/i 1 mile	Planned April-May 2003	Unknown	NI if surveys conducted and no nests are found	Conduct protocol surveys in April/May of 2003.	Not Needed
Northern Spotted Owl <i>Strix occidentalis (Threatened)</i>	Yes	Yes	Yes	NE	HJA will continue to monitor location in 2003	Not Needed
Bald Eagle <i>Haliaeetus leucocephalus (Threatened)</i>	Yes	Planned April-May 2003	Sightings at Cougar Reservoir, no nests known	NE if surveys are conducted and no eagle nests are found	Surveys should be conducted in April/May 2003.	Not Needed

Summary of Impact Determinations for Fish Species listed as Threatened or Endangered

Bull Trout <i>Salvelinus confluentus</i>	Yes	Not Needed	No	BE	None Needed	Informal
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NI / NE = **No** Impact for Sensitive Species. **No** Effect for TE species.

NLCT = May impact individuals or their habitat, but the action will **Not Likely Contribute** to a **Trend** towards Federal Listing or loss of viability to the population or species.

MCT = May impact individuals or their habitat, with a consequence that the action **May Contribute** to a **Trend** towards Federal Listing or a loss of viability to the population or species.

BI = **B**eneficial **I**mpact for sensitive species; **B**eneficial **E**ffect for TE species.

NLAA^a = For TE species, May Effect, **Not Likely to Adversely Affect**

LAA^b = For TE species, May Effect, **Likely to Adversely Affect**

a A NLAA determination requires *informal consultation* with the U.S. Fish and Wildlife Service.

b For *listed* species, a LAA determination requires *formal consultation* with the U.S. Fish and Wildlife Service

Table 2: Summary of Biological Background for Animal Species on the Regional Forester's Sensitive Species List, Willamette National Forest (November 28, 2000) with habitat in the Vicinity of Smith Creek Irrigation Project Area.

Species	Habitat
Northern Spotted Owl <i>Strix occidentalis</i> Status: <i>Threatened</i>	Occur primarily in the interior of older timber stands with structure required for food, cover, nest sites, and protection from weather and predation. Reproductive habitat = forest w/ canopy closure 60 – 80%; multi-layered, multi-species canopy dominated by large overstory trees (> 30" dbh); abundant large trees w/deformities (e.g. large cavities, broken tops, dwarf-mistletoe infections, decadence); abundant large snags/down logs; and sufficient open flying space below the canopy. Foraging habitat = forest w/ > 2 canopy layers; overstory trees > 21" DBH; abundant snags/down wood; and a 60-80% canopy closure. Dispersal habitat = forest w/ > 11" DBH trees and > 40% canopy closure. Numerous sightings recorded on the McKenzie River RD.
Northern Bald Eagle <i>Haliaeetus leucocephalus</i> Status: <i>Threatened</i>	Use scattered old-growth conifer trees in proximity to rivers, lakes, and reservoirs with plentiful prey. Feed primarily on fish, but will also eat waterfowl and carrion. On the McKenzie River RD, they currently nest at Clear Lake and Blue River Reservoir. There have been sightings at Trailbridge, Cougar, and Smith Reservoirs, Fish, Linton and Lost Lakes and along the McKenzie River.
American Peregrine Falcon <i>Falcon peregrinus anatum</i>	Preferred nesting sites are sheer cliffs 75 ft. or more in height. They forage within a variety of forest types. Numerous potential and occupied habitat occurs on the McKenzie River RD.
Bufflehead <i>Bucephala albeola</i>	Summers on wooded lakes and rivers, winters on lakes and coastal waters. Nesting normally occurs near lakes in tree cavities 5-50 feet high. Dives underwater and eats small mollusks, fish, snail, and crustaceans. Also eats aquatic insects. Only documented wintering on and migrating through the McKenzie River RD.
Harlequin Duck <i>Histrionicus histrionicus</i>	During nesting (April-June) adults require fast-flowing water with one + loafing sites nearby, dense shrub or timber/shrub mosaic vegetation on the bank, and an absence of human disturbance. Nest on ground under the shelter of vegetation, rocks, or large woody debris. Midstream loafing sites are very important. Broods prefer low gradient streams with adequate macroinvertebrate abundance. Recorded breeding/foraging in tributaries to the McKenzie River and foraging in the McKenzie River.
Yellow Rail <i>Coturnicops noveboracensis</i>	Feeds in shallow water, eating snails, insects, and some seeds and grasses. Summers on wet meadows, marshes, winters on grasslands, fields, coastal marshes. No documented habitat on McKenzie River RD.
Black Swift <i>Cypseloides niger</i>	Found near cliffs in mountainous regions. Feeds on-the-wing eating flying insects. Nests in small colonies on ledges or mountain crevices, often behind a waterfall. There are historical summer records in the Santiam Pass area, Linn County, which suggests breeding in that area. No current sightings on the McKenzie River RD.
Tricolored Blackbird <i>Agelaius tricolor</i>	Found in freshwater marshes w/cattails and dense shrubs, grain fields. Feeds on the ground, eating insects, grains, and weed seeds. Nests in large colonies. Nest of coarse reeds and grasses lined with finer material placed in reeds above ground or water. Breeds locally in eastern Rogue Valley, S. Klamath Co, and mainly in north-central Oregon. Scattered summer reports in Willamette Valley. No documented sightings on the McKenzie River RD.
Baird's Shrew <i>Sorex bairdii permiliensis</i>	Not much is known of its habitat, but in 1986, 2 specimens were trapped from an open Douglas-fir forested area with numerous rotting logs in Polk Co. It has been trapped on the McKlenzie River RD in the Mill Creek area and south as well as in the Blue River watershed.

Pacific Shrew <i>Sorex pacificus</i> <i>cascadensis</i>	Generally found in wet or marshy areas along class III-IV streams w/red alder-salmonberry-skunk cabbage and banks with abundant down material. Occasionally found in adjacent conifer forest w/moist abundant decaying logs and brush. Nests made of grasses, mosses, lichens, or leaves. Feed on slugs, snails, insects, and sometimes vegetation. No documented sightings on the McKenzie River RD.
Pacific Fisher <i>Martes pennanti</i>	Found in a wide variety of densely forested habitats at low to mid-elevations. Diet consists of small and medium-sized forest mammals (porcupines, snowshoe hares, tree squirrels, mice, and voles most common). Also eat carrion, and will seasonally eat birds, bird eggs, amphibians, fish, and insects. Use ground burrows, tree cavities, witches'-brooms or other clumped growth, or occasionally bird or small mammal nests as resting sites. Tree cavities are used by most maternal females with young and ground burrows are used mostly in winter. Data suggests they do better in areas with minimized fragmentation of old growth, second-growth, and riparian area and in areas with abundant down and standing woody material important. Few documented sightings on the McKenzie River RD, mostly in the higher elevations.
California Wolverine <i>Gulo gulo</i>	Found primarily in wilderness or remote country where human activity is limited. High elevation areas appear to be preferred in summer, which may effectively separate wolverines and intensive human disturbance in most areas. In winter, wolverines move to lower elevations which are snowbound with very limited human activity. They do not significantly use young, dense stands of timber or clearcuts. The majority of activity occurs in large expanses of scattered mature timber, with some use of ecotonal areas such as small timber pockets, and rocky, broken areas of timbered benches. Heavy use of openings w/ good winter populations of big game, a principal source of carrion which makes up much of the wolverine's diet. They also feed on marmots, snowshoe hares, various rodents, insects, insect larvae, eggs, and berries. Rare documented sightings on the McKenzie River RD, mostly at higher elevations.
Pacific Fringe-tailed Bat <i>Myotis thysanodes</i> <i>vespertinu</i>	Rare in Oregon. Very little known about habitat in Oregon. Three captured in 1971 were associated with young coniferous forest. They are known to use caves, mines, rock crevices, and buildings as both day and night roosts. Nothing is known about habits in winter. Diet of moths, leafhoppers, lacewings, daddy-longlegs, crickets, flies, true bugs, and spiders. No recorded sightings on the McKenzie River RD.
Oregon Slender Salamander <i>Batrachoseps wrighti</i>	Live in forested areas, especially old-growth Douglas-fir and younger stands with abundant downed large logs. They lay their eggs under thick bark, inside a crevice in a log, or in talus. Juveniles and adults live under thick bark, inside partially decayed logs, or in debris piles around the bases of large snags. They also occur in moist talus w/ abundant woody debris. Documented sightings are scattered throughout McKenzie River RD at lower elevations.
Cascade Torrent Salamander <i>Rhyacotriton cascadae</i>	Live in very cold, clear springs, seeps, headwater streams, and waterfall splash zones. Forage in moist forests adjacent to these areas. Eggs are laid in rock crevices in seeps. Larve and adults live in gravel or under small cobbles in silt-free, very shallow water that is flowing or seeping. Adults may be found under debris on streambanks or in streamside forests and talus during rainy periods. Documented sightings from class IV stream headwater areas on McKenzie River RD.
Foothill Yellow-legged Frog <i>Rana boylei</i>	Live in sections of low-gradient streams with exposed bedrock or rock and gravel substrates. Attach eggs to the bottom of quiet scour-pools or riffles in gentle-gradient streams, often where there is only slight flow from the main river. Hatchlings cling to egg masses initially and then to rocks. Nearest known sightings are on private land adjacent to the Sweet Home RD to the northwest. No documented habitat or sightings on the McKenzie River RD.

Oregon Spotted Frog <i>Rana pretiosa</i>	Favor lakes and slow moving streams associated w/a permanent water source w/ a soft and muddy bottom. A marsh specialist w/strong preference/requirement for warmer waters; more aquatic than other ranids; often found in water or water's edge floating on the surface or resting on aquatic vegetation. Diet is invertebrates caught above and below the surface. Early breeders: egg masses are typically deposited on top of one another in a communal fashion, not attached to vegetation, and deposited in warmer shallow water, making them susceptible to mortality due to freezing or drying. The only documented population on the McKenzie River RD occurs in and around Penn Lake in the Three Sisters Wilderness Area.
Northwestern Pond turtle <i>Clemmys marmorata marmorata</i>	Inhabits marshes, sloughs, moderately deep ponds, slow moving portions of creeks and rivers. Observed in altered habitats including reservoirs, abandoned gravel pits, stock ponds, and sewage treatment plants. Occur from sea level to about 1,830 meters. Require basking sites, such as partially submerged logs, vegetation mats, rocks and mud banks, and may even climb a short way onto tree branches that dip into the water. They use uplands for egg laying, overwintering, and dispersal. They may move up to 500 meters and possibly more for overwintering where they burrow into leaf litter or soil. Nest distances from the water course ranges from 3 meters to over 402 meters. Most nesting areas are characterized by sparse vegetation, usually short grasses or forbs. Documented sightings on the McKenzie River RD are in lower elevation side-channels of the McKenzie River.

Table 3. A Summary of Biological Background for Threatened and Endangered Fish Species

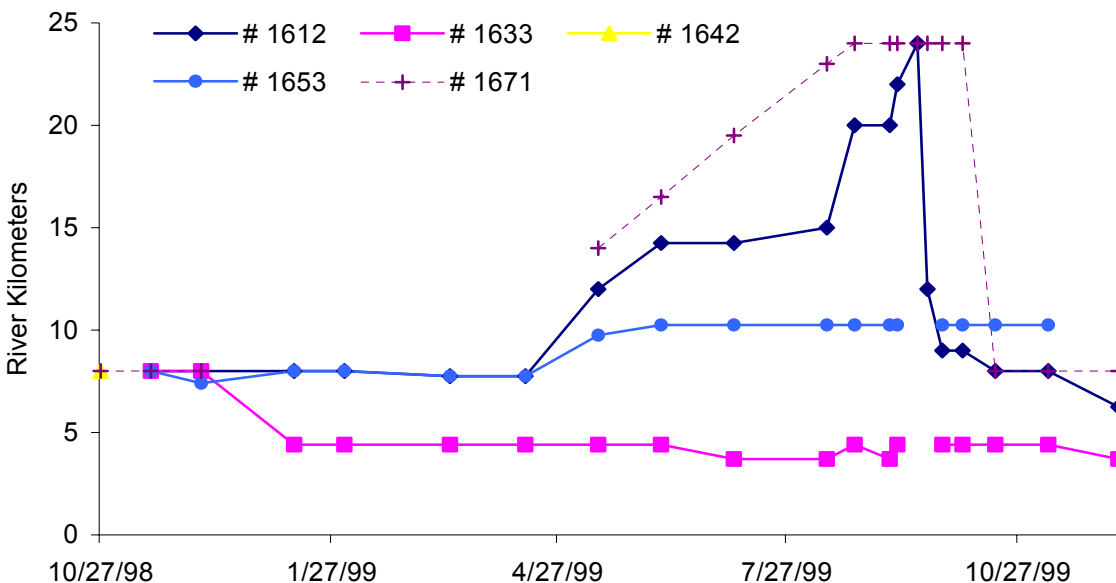
Bull Trout <i>Salvelinus confluentus</i>	Bull trout spawn in cold tributary streams in the early fall (September - October). They deposit eggs in a redd and juvenile bull trout typically rear in the parent stream for two years and then migrate in the spring to larger waters for rearing to adulthood. At age 5, they migrate back to their natal tributary to spawn. Bull trout are very piscivorous (fish eating) allowing them to reach up to 20 lbs in size depending on food availability.
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IV. THREATENED AND ENDANGERED SPECIES

BULL TROUT PRESENCE AND HABITAT USE

On June 10, 1998 the US Fish and Wildlife Service (USFWS) listed the Columbia River bull trout population segment (including the McKenzie sub-basin) as Threatened under the federal Endangered Species Act. Buchanan et al. (1997) listed the bull trout population in the mainstem McKenzie as “of special concern”, the South Fork McKenzie population as “high risk” and the bull trout above Trail Bridge Reservoir as “high risk”. Bull trout in the Middle Fork Willamette are listed as “probably extinct”.

Construction of Cougar Dam in 1963 created an isolated population of bull trout inhabiting the South Fork McKenzie River above the dam. Consequently these fish shifted from a fluvial to adfluvial life history pattern. Adult bull trout begin migrating out of the reservoir in late April and stage in large holding pools in the mainstem South Fork in May through August (Taylor and Reasoner 2000) (Figure 3).



River (Wade and Tranquilli, 2001). Juvenile distribution in the mainstem McKenzie is confined primarily to seven river miles immediately below the mouth of Anderson Creek (Taylor 2001). It is uncertain if juveniles in the South Fork McKenzie are also distributed only within a relatively small portion of the available habitat immediately below the mouth of Roaring River, however, no juveniles have been captured below Homestead Campground (C. Helms, personal comm., 2002).

PROJECT IMPACTS TO BULL TROUT

Direct Effects

No direct effects are anticipated to bull trout.

Habitat Loss

No loss of habitat is anticipated from construction of this project.

Discussion

In a normal water year adult bull trout will inhabit the South Fork McKenzie above Cougar Crossing during pump installation and operation. Thus, there is no anticipated impact on adult migration out of or into Cougar Reservoir. Data is limited on distribution of fry and juvenile bull trout in the South Fork McKenzie, however, data collected in the mainstem suggests that fry and juveniles inhabit only a small portion (seven miles) of available rearing habitat immediately below the mouth of Anderson Creek. Juvenile trapping conducted by ODFW in the South Fork has not identified juveniles below Homestead Campground. I expect that fry and juveniles in the South Fork McKenzie probably inhabit areas immediately downstream of the mouth of Roaring River and are unlikely to be present during installation or operation. If these fish are present in small numbers during operation the pump is screened and surrounded by a coarse rock filter to reduce the likelihood of impinging any fish.

Conclusion

This project may affect, but is not likely to adversely affect bull trout. Adult and juvenile bull trout are unlikely to be present. If bull trout are determined to be present during the project the Corps will stop work and reinitiate consultation. If successful, the project will improve habitat for bull trout and their prey species, which may improve foraging for bald eagles and osprey. Maintenance of the sedge bed will provide habitat for western toads that breed in the lake, and willow stands may provide habitat for songbirds during migration. An established stand of riparian vegetation will provide cooler and damper conditions in late summer than those provided by the exposed lakebed, providing cover for wildlife species approaching the river from the forest to the east, and moisture for ground dwelling species.

BALD EAGLE (*Haliaeetus leucocephalus*)

BALD EAGLE PRESENCE AND HABITAT USE

Bald eagles occasionally forage in the South Fork of the McKenzie River and Cougar Reservoir, but eagle nesting has never been confirmed in the area. The nearest confirmed bald eagle nest is near Blue River reservoir, 10 miles to the north of the Smith Creek work site. Foraging by this pair may be responsible for some or all of the sightings of eagles at Cougar.

The McKenzie River Ranger District conducted protocol ground surveys for bald eagles in the Cougar Dam area in 1995, 1997, 1998, 2000, 2001, and 2002. Eagles have consistently been sighted near the dam and also up the East Fork of the McKenzie River. They have also been seen flying south

from the dam as far as Section 8 on the east side of the reservoir. Ground surveys have not been conducted at the south end of the reservoir near Smith Creek. An aerial district survey in 1994 failed to locate any bald eagles at Cougar Reservoir.

With the moderate levels of visitors in the Cougar Reservoir area, it appears there would be more frequent sightings of bald eagles if they were nesting. However, nesting cannot be ruled out entirely. Intensive search efforts are sometimes needed to locate an eagle nest.

Direct Effects:

No direct effects are anticipated, but bald eagle surveys at the south end of Cougar Reservoir have not been conducted. Noise disturbance from this project could affect nesting bald eagles if they are in the area. Especially with the recent drawdown and less activity in the south end of the reservoir, it is possible that a pair of eagles may establish a new nest site.

The plantings may increase bald eagle prey species and provide a benefit to bald eagles if the project is successful.

Habitat Loss:

This project will not result in loss of bald eagle habitat.

Discussion:

At this time, bald eagles are not known to nest in the area, and this project would not affect them. There are no historic records of eagle nests in the Cougar Reservoir area, but surveys at the south end of the reservoir have not been conducted. Two protocol bald eagle surveys at the Smith Creek site are recommended before this project is implemented. If nesting bald eagles are found, project mitigation activities may be pursued.

SPOTTED OWL (*Strix occidentalis*)

SPOTTED OWL PRESENCE AND HABITAT USE

One pair of spotted owls is known to nest in the vicinity of the project. The Slide Creek pair has been known since 1990. In 1990, 1991, 1997, 1998, 1999, 2000, 2001, and 2002 their activity center was located between approximately .3 and .6 miles from the project pump site. The 2002 nest location was approximately .3 miles from the pump site; this nest fledged 1 young in 2002. The pair was active and nested successfully in 2000 and 2001 as well at a different location (pers comm R. Seitz).

Direct Effects:

Work to excavate the trench and install the irrigation pipe will occur during 2-3 days in May. The diesel pump will run at most 8 hours a week on a single day during July, August, and September, and probably once every other week in June. Pipe installation and the pumping operation are potential sources of disturbance to breeding owls, however, evaluation of potential effects should include the following considerations:

- Most of the pumping will occur outside the critical breeding season (March 1 – July 15). Pumping will occur on approximately 5 days in the 7 weeks prior to July 15.
- In normal fill years, including years the Slide Creek Pair nested successfully, this area would be frequented by power boats, although boating is probably infrequent until July in a typical year. Additional sources of disturbance include a heavily used campground at Slide Creek, located about .25 miles from several known Slide Creek nest sites, and two additional heavily used

campgrounds and a day use area (at Sunnyside and Cougar Crossing) operating one mile from the 2002 activity center.

Habitat:

This project will not result in loss of spotted owl habitat.

Discussion:

Trench excavation and pipe installation will occur in May. These activities are not expected to produce loud noise that would have a high probability of disturbing breeding owls. The pumping operation has the most potential for creating significant noise, and most of the pumping occurs after the spotted owl breeding season. Diesel pumping and sprinkler operation will occur on approximately 5 days within the breeding season, towards the end of the season when the pair is likely to be highly attached to their young. The disturbance will originate in an area that is a constant source of noise, movement, and other types of disturbance (eg..gunshots, fireworks) due to recreational use of facilities and the reservoir, which the owls may be used to avoiding. Planting crews will occupy the flat over a period of several days during the breeding season; again, this level of activity pales in comparison to normal recreation activities in this area when full.

V. CONCLUSION

This project will not affect bull trout.

This project will not affect spotted owls because the noise-generating activities will occur greater than 0.25 miles from the activity center. In addition, most disturbance will occur outside the breeding season. The Slide Creek pair have nested successfully despite a substantial amount of disturbance caused by recreational use of the lake and surrounding lands.

This project will not affect bald eagles if protocol surveys at the south end of Cougar Reservoir are conducted and no nests are found.

This project will not affect spotted frogs.

This project will have no effect on peregrine falcons if protocol surveys at Tipsoo Butte are conducted and no nesting pairs are found. Suitable peregrine falcon breeding habitat may occur near Tipsoo Butte, within one mile of the project. This habitat will be surveyed for the presence of nesting peregrines.

Kincaid's lupine does not occur in the vicinity of the project. Listed Spring Chinook do not occur above Cougar Dam.

This project will have no effect on Species of Concern listed in USFWS correspondence dated Nov 8, 2002, in response to a species list request (USFWS reference 1-7-03-SP-038).

If successful, the project will improve habitat for bull trout and their prey species, which may improve foraging for bull trout, bald eagles and osprey. Maintenance of the sedge bed will provide habitat for western toads that breed in the lake, and willow stands may provide habitat for songbirds during migration. An established stand of riparian vegetation will provide cooler and damper conditions in late summer than those provided by the exposed lakebed, providing cover for wildlife species approaching the river from the forest to the east, and moisture for ground dwelling species.

VI. LITERATURE CITED

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